

### ③ Irrational #

What are they? #s that ~~repeat~~ <sup>continue</sup> without a pattern  
#s that can't be written as a fraction

Examples:  $\pi$ ,  $.3795148\dots$   $-\sqrt{95}$   $\sqrt{7}$

### ④ Rational # #s that have a repeating pattern

What are they? decimals that end  
can be written as a fraction  
whole #s,  
pos + neg

Examples:  $0$ ,  $-5$ ,  $7$   $\sqrt{16}$   $4.25$   $\frac{1}{7}$   $-\frac{2}{5}$

## Practice

① Approximate  $\sqrt{10}$

$$\begin{array}{ccc} \textcircled{3} & & \textcircled{4} \\ \sqrt{9} & \longleftrightarrow & \sqrt{16} \\ & \underbrace{\hspace{2cm}} & \\ & \sqrt{10} & \end{array}$$

$$\textcircled{3} \frac{1}{7} \approx 3.14$$

③  $(x^2)^3$   
 $x^2 \cdot x^2 \cdot x^2 = x^6$

② Approximate  $\sqrt{27}$

$$\begin{array}{ccc} \textcircled{5} & & \textcircled{6} \\ \sqrt{25} & \rightarrow & \sqrt{36} \\ & \underbrace{\hspace{2cm}} & \\ & 2 & \end{array}$$

$$\approx \textcircled{5 \frac{2}{11} \approx 5.18}$$

④  $(x^2y^3)^4$   
 $x^2y^3 \cdot x^2y^3 \cdot x^2y^3 \cdot x^2y^3$   
 $x^8y^{12}$

⑤  $2\sqrt[3]{8} + 4 - 5$

$$2(2) + 4 - 5$$

$$4 + 4 - 5$$

⑥  $2\sqrt[3]{125} - 5$

$$2(5) - 5$$

$$10 - 5 = 5$$